

1 I claim:

1 1. A method of removing sulphide ion from a fluid having a pH in excess of about 9
2 comprising:

3 adding a ferrous gluconate chelating agent to said fluid in sufficient quantity to form iron
4 sulphide with the sulphide ion; and
mixing the chelate with the fluid and forming iron sulphide.

1 2. The method of claim 1 further comprising maintaining the ferrous gluconate at a level to
maintain the sulphide concentration below a certain desired level.

1 3. The method of claim 1 wherein the quantity of gluconate added to said fluid exceeds the
2 quantity needed to chelate all of the iron in said fluid.

1 4. A method of reducing the hydrogen sulphide concentration in a drilling fluid comprising:
2 adding a ferrous gluconate compound to said fluid; and
3 allowing said ferrous gluconate to react with said hydrogen sulphide such that sulphide is
4 precipitated.

1 5. The method of claim 4 wherein said sulphide is precipitated as iron sulphide.

1 6. The method of claim 4 wherein said drilling fluid has a pH greater than 9.0.

1 7. The method of claim 4 wherein said drilling fluid has a pH ranging from about 11 to
2 about 12.

1 8. A drilling fluid additive comprising an iron (II) based hydrogen sulphide scavenger chelated
2 with a gluconate chelating agent which provides a stable complex with said iron at pH greater than
3 about 9.

1 9. The drilling fluid additive of claim 8 which provides a stable complex with said iron at a
2 pH of at least about 11.5.

1 10. The drilling fluid additive of claim 8 which provides said stability at subterranean formation
2 temperatures.

1 11. The drilling fluid additive of claim 8 which provides said stability at temperatures ranging
from ambient temperature to over 300 degrees Fahrenheit.

1 12. The drilling fluid additive of claim 8 which provides improved resilience to the rheological
properties of said fluid.

1 13. In combination with a drilling mud comprising crosslinkable polymers delivered to a well
2 during drilling operations, an additive for decreasing hydrogen sulphide concentration in the mud,
3 the additive comprising an effective amount of a ferrous chelating agent mixed into the mud to
4 reduce hydrogen sulphide concentration in the mud circulating in the well, wherein such additive
5 fails to significantly cause crosslinking of said polymers.

1 14. The additive of claim 13 wherein the iron in said ferrous chelating agent does not
significantly ionize to a trivalent state in said mud.

1 15. The additive of claim 13 wherein said additive enhances the mud's ability to withstand well
temperatures under shear.

1 16. A polymer based drilling fluid comprising ferrous gluconate.